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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,746	09/28/2006	Shuitsu Fujii	ADTEC-4-PCT/Minori	4948
156 7590 03/26/2010 Kirschstein, Israel, Schiffmiller & Pieroni, P.C. 425 FIFTH AVENUE 5TH FLOOR NEW YORK, NY 10016-2223			EXAMINER PAIK, SANG YEOP	
			ART UNIT 3742	PAPER NUMBER
			NOTIFICATION DATE 03/26/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/594,746	Applicant(s) FUJII ET AL.	
	Examiner SANG Y. PAIK	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-15 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 8-10, 12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 11 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/15/09</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 14 of specification, the same reference numeral 45 is used to describe both the tube portion and the antenna.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout the claims, the "outside conductor" is recited but it unclear if the recited outside conductor refers to the cylindrical outside conductor or the outside conductor of the coaxial cable.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claim 8 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al (US 5,053,678) in view of Leprince et al (US 4,611,108) or Blum et al (US 6,388,225).

Koike shows the structure claimed including an outside conductor shown by a coaxial discharge box (6) as a plasma chamber, a dielectric insulator (8) having a tubular shape inserted in an axial hole formed in the outside conductor box (6), a coaxial cable (2) having one end fitted or connected to one end face side of the outside conductor box (6), an insulated antenna shown by a conductor (5a) extending from an inside conductor of the coaxial cable, a through-hole formed in the outside conductor box with the axial hole, an outside conductor (2, 5) of the coaxial cable that is connected with the outside conductor (6), a gas inlet pipeline (17) is provided in the outside conductor box. However, Koike does not explicitly disclose that the outside conductor box (6) that is cylindrical.

Leprince or Blum shows a plasma chamber having a cylindrical outside conductor having an antenna/conductor formed by an inside conductor of a coaxial cable whose outside conductor is further connected with the cylindrical outside conductor.

In view of Leprince or Blum, it would have been obvious to one of ordinary skill in the art to adapt Koike with the outside conductor plasma chamber that is in the known cylindrical shape or any other desired shape that provides an adequate microwave generated plasma.

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6. Claims 9, 10, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike in view of Leprince or Blum as applied to claim 1 above, and further in view of Koinuma et al (US 5,221,427) and Li et al (US 6,221,268).

Koike in view of Leprince or Blum shows the structure claimed except for a cylindrical gap.

Koinuma shows that it is known to provide a plasma generator using an alternating frequency with a conductor extending in a cylindrical outside conductor (12, 29) with a cylindrical electric discharged tube (13) provided in the axial hole of the outside conductor wherein a cylindrical space or gap is provided between the tube and the outside conductor. Koinuma teaches that with the cylindrical discharge insulator/tube, a desired dielectric constant can be achieved. Koinuma also shows a gas that is provided in the cylindrical space/gap.

In view of Koinuma, it would have been obvious to one of ordinary skill in the art to adapt Koike, as modified by Leprince or Blum, with a cylindrical space created by the discharge tube to further improve the desired impedance in the plasma chamber.

With respect to the recited lid for closing one end of the outside conductor, Blum shows a lid or disc that closes off one end of the outside conductor wherein an insulating member is fixed with an interior conductor with an antenna is fitted thereto.

Allowable Subject Matter

7. Claims 11 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SANG Y. PAIK whose telephone number is (571) 272-4783. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571) 272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SANG Y PAIK/
Primary Examiner, Art Unit 3742